

# Southern Bushfire Solutions

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## BAL Assessment Report

### Residential Construction

lot 63 DP1188859  
18 Marquess Pl,  
Murrumbateman NSW

# Executive Summary

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Southern Bushfire Solutions has been engaged to provide a BAL assessment for construction of a residence in a new urban subdivision at 18 Marquess Pl, Murrumbateman.

The lot is approximately 1030m<sup>2</sup> in area and situated in a new large lot urban subdivision. The lot is to be clear of hazard vegetation with adjacent residential lots considered managed land in accordance with estate by laws.

**The assessment finds that the development is considered BAL-LOW in accordance with A1.12.5 and meets the requirements of NSW Planning for Bushfire Protection (2019). Specific construction measures are required for ember protection.**

**Advice is provided to ensure future landscaping within the lot is consistent with NSW standards for Asset Protection Zones and does not become a fire hazard.**



# Bushfire Attack Level (BAL) Assessment



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<b>Client Details:</b> Paul Hennock 0407 780 904	
<b>Site Address:</b> 18 Marquess Pl Murrumbateman	<b>Site assessment date:</b> 12 August 2024
<b>LOT 63 DP1188859</b>	<b>Zoning: R2</b>   <b>Area: 1.03ha</b>   <b>LGA: Yass Valley Council</b>
<b>DESCRIPTION OF THE PROPOSAL:</b> Construction of two new residences with associated landscaping and sheds. Adjacent residential lots are considered managed land in accordance with estate by laws. <b>The BAL rating for construction is based on the implementation of the APZ recommendations in this report.</b>	

an assessment of the proposal in accordance with NSW Planning for Bushfire Protection (2019) and noted the following details:

Area FDI: Southern Ranges Fire Area FDI = 100					
Hazard	Vegetation Classification	Effective Slope	Distance	BAL	Assessment notes
A	Managed Land	-	>100m	<b>LOW</b>	Assessment to A1.12.5 of PBP
B	Managed Land	-	>100m	<b>LOW</b>	Assessment to A1.12.5 of PBP
C	Managed Land	-	>100m	<b>LOW</b>	Assessment to A1.12.5 of PBP
D	Managed land	-	>100m	<b>LOW</b>	Assessment to A1.12.5 of PBP

The dominant Bushfire Attack Level (BAL) for this proposal is determined to be:

## BAL- LOW

Assessing Officer:

**Neil Willis** grad dip. Bushfire Protection  
FPA Australia BPAD Level 3- NSW BPAD31129

**DATE OF ISSUE: 16 August 2024**



**SBS ASSESSMENT REFERENCE: 2025017**

NOTE: This BAL determination is only valid for a period of 12 months from the date of issue.

# Planning for Bushfire Protection (2019) Compliance Summary

	<i>Performance Criteria</i>	<i>Compliance</i>	<i>Comment</i>
<b>Asset Protection Zones</b>	<ul style="list-style-type: none"> <li>APZ's are commensurate with the construction of the building.</li> <li>A defendable space is provided.</li> <li>APZs are managed and maintained to prevent the spread of fire towards the building.</li> <li>APZ is provided in perpetuity.</li> <li>APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.</li> </ul>	Meets acceptable solutions	Recommendations are made for all land within the lot to be maintained as an APZ. This exceeds the minimum requirement of A1 of Planning for Bushfire Protection
<b>Access</b>	<ul style="list-style-type: none"> <li>Firefighters are provided with safe all-weather access to structures and hazard vegetation.</li> <li>The capacity of access roads is adequate for firefighting vehicles.</li> <li>There is appropriate access to water supply.</li> <li>Firefighting vehicles can access the dwelling and exit the property safely</li> </ul>	Meets acceptable solution	There are no property access requirements for buildings sited with an unobstructed path no greater than 70m is provided to the most distant point from the public street frontage. Access >70m is to be 4m wide with 4m vertical clearance and a turning provision as per A3 of PBP. This is provided on the site plans.
<b>Water Supplies</b>	<ul style="list-style-type: none"> <li>Adequate water supply is provided for firefighting purposes.</li> <li>Water supply is located at regular intervals.</li> <li>Water supply is accessible and reliable for firefighting operations.</li> <li>Flows and pressures are appropriate.</li> <li>The integrity of the supply is maintained.</li> <li>A static water supply is provided where reticulated water is not available</li> </ul>	Meets acceptable solutions	No reticulated supply is available in the area. A 20,000L firefighting water supply will be required for lots >10,000m <sup>2</sup> . This is to be provided in a concrete or metal tank. A 65mm Storz coupling is to be accessible with hard stand for a fire appliance within 4m (Underground tanks may have an access hole of 200mm). All exposed pipes, fittings and valves are to be metal.
<b>Electricity services</b>	<ul style="list-style-type: none"> <li>Location of electricity services limits the possibility of ignition of the surrounding bushland or the fabric of buildings.</li> </ul>	Meets acceptable solutions	Recommendations are made for power to be underground where possible.
<b>Gas Services</b>	<ul style="list-style-type: none"> <li>Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings</li> </ul>	Meets acceptable solutions	If bottled gas system is to be installed, recommendations are made to comply with AS1596. All visible connections and pipes are to be metal.

<b>Construction Standards</b>	<ul style="list-style-type: none"> <li>• The proposed building can withstand bushfire attack in the form of embers, radiant heat and flame contact.</li> <li>• Proposed fences and gates are designed to minimise the spread of bushfire.</li> <li>• Proposed class 10a buildings are designed to minimise the spread of bushfire</li> </ul>	Meets acceptable solutions	The building has been assessed as BAL-LOW.  The bushfire risk is not sufficient to warrant specific construction measures.
<b>Landscaping</b>	<ul style="list-style-type: none"> <li>• Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.</li> </ul>	Meets acceptable solutions	Recommendations are made for all landscaping within the lot to comply with NSW RFS “ <i>Asset Protection Zone Standards</i> ” in A4 of PBP (2019)

# Supporting Information

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Southern Bushfire Solutions has been engaged by the proponent to determine the BAL rating and inform the process for complying development. This assessment is not intended to meet the information requirements for referral to NSW RFS, and no assessment has been made of any other aspects of the development.

## The BAL Rating Explained

**The proposal is located in a large lot residential area with adjacent urban lots considered to be managed land that are unlikely to support a fully developed bushfire.** The buildings have been assessed as BAL- LOW, the bushfire hazard is insufficient to warrant specific construction measures.

BAL rated construction standards are not intended to ensure that the building will survive a bushfire on all occasions. They are only designed to reduce the risk of ignition relative to the intensity of the bushfire behaviour. Building survivability depends on a wide range of factors, including the actions of the occupants and firefighters. Early evacuation is always considered the best option for life safety, and preparation of a bushfire survival plan is recommended. Southern Bushfire Solutions can assist with developing a bushfire survival plan if required.



Image courtesy of CFA Victoria

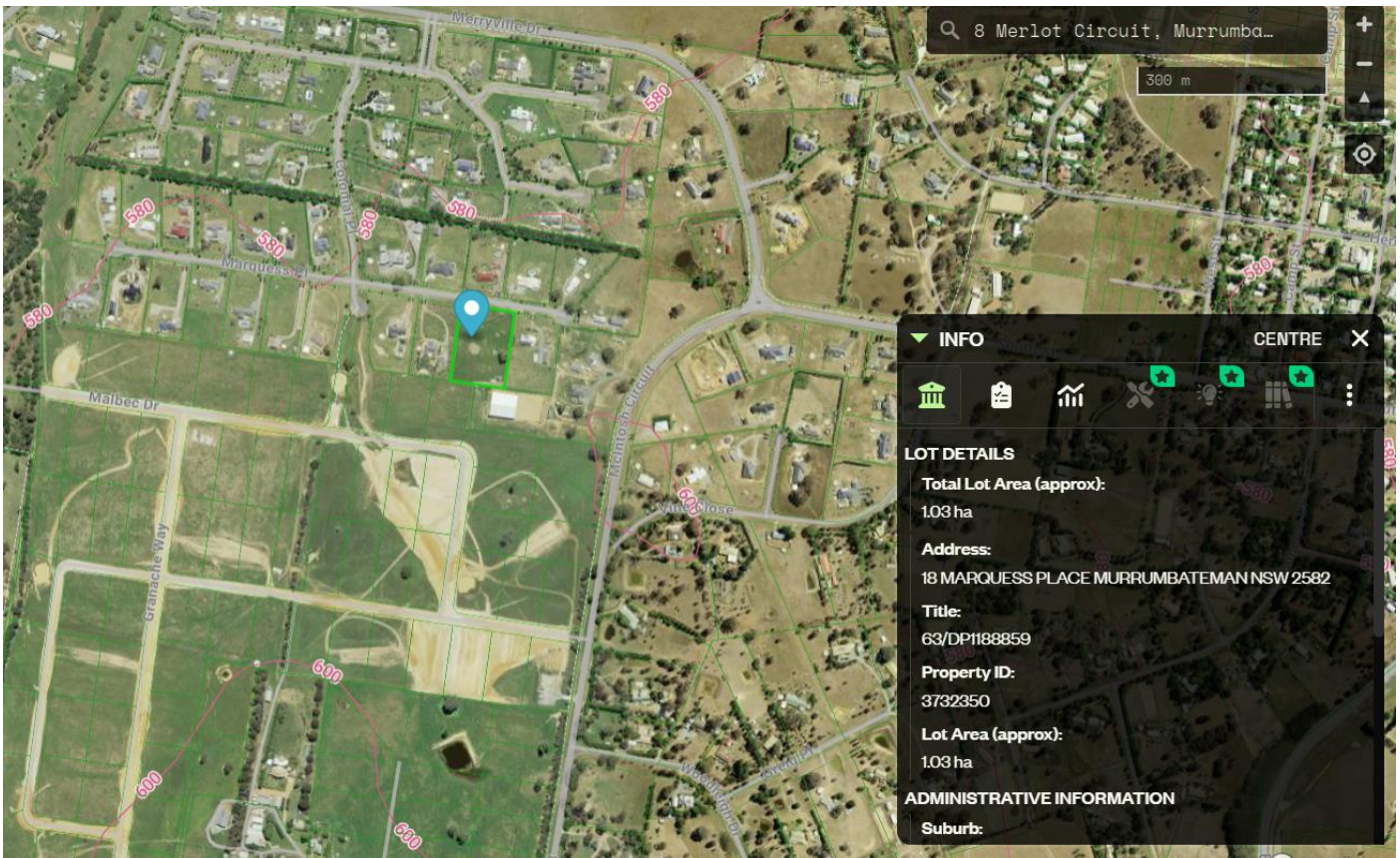
## BAL Assessment Methodology:

- BAL Assessment is in accordance with A1 of NSW RFS Planning for Bushfire Protection (2019).
- All distance and slope measurements were taken upon site survey using a “Tru-Pulse 200” laser range finder and confirmed by satellite data.
- Vegetation has been classified out to 140m from the development in accordance with NSW RFS Planning for Bushfire Protection (2019).
- Effective slope has been assessed to 100m from the development.
- Measurements were further supported by the building site plans provided by the client.

## Site Location:

The site is located at 18 Marquess Pl, Murrumbateman. This area is in the Yass Valley Council area and assumes a Fire Danger Index (FDI) of 100 for BAL assessment.

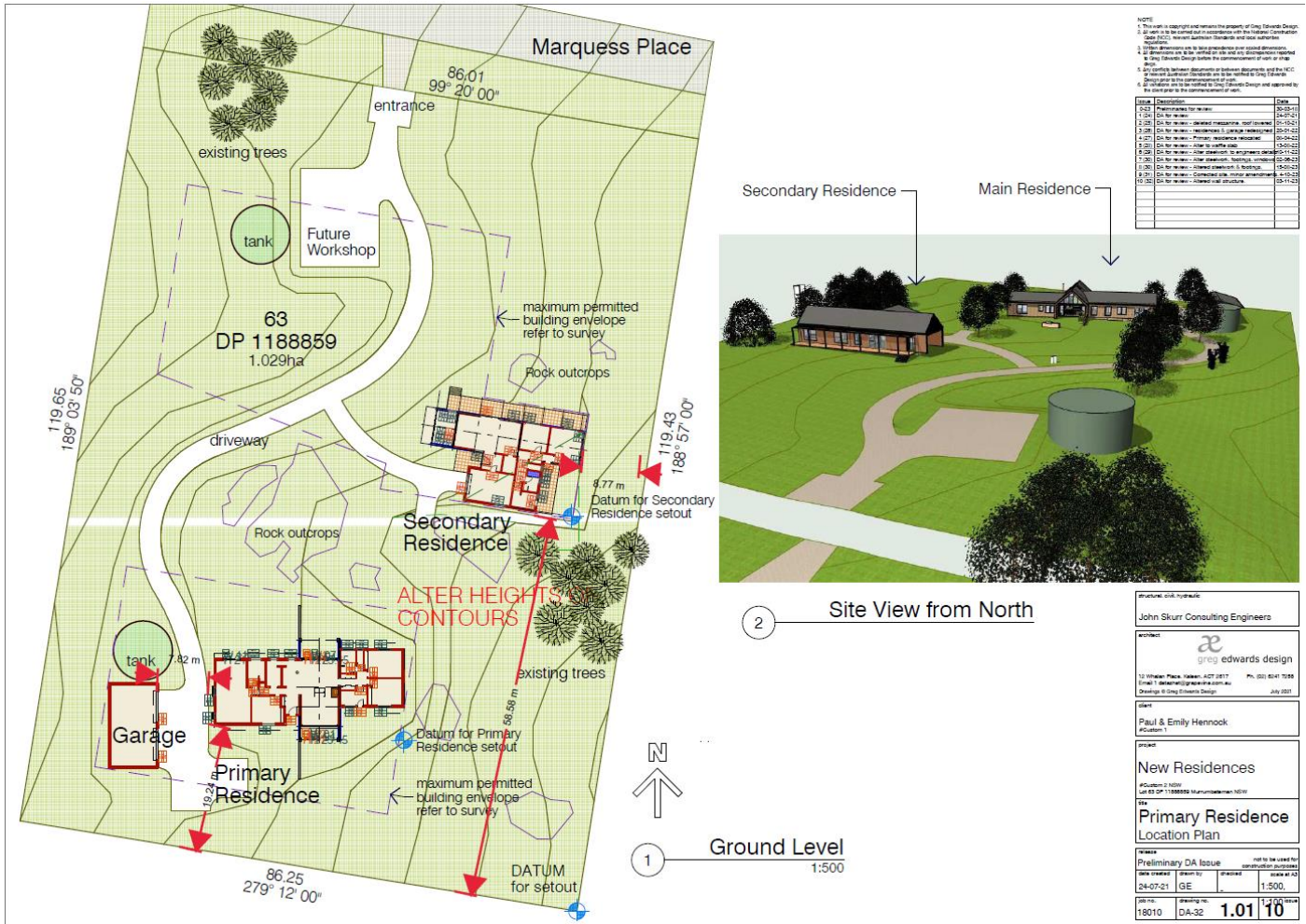
The property is approximately 1030m<sup>2</sup> positioned within the new large lot urban subdivision with new residential lots surrounding the site.



Site location

# Site plan of the proposal

Assessment has been made on the information provided:



Site plan provided by the client

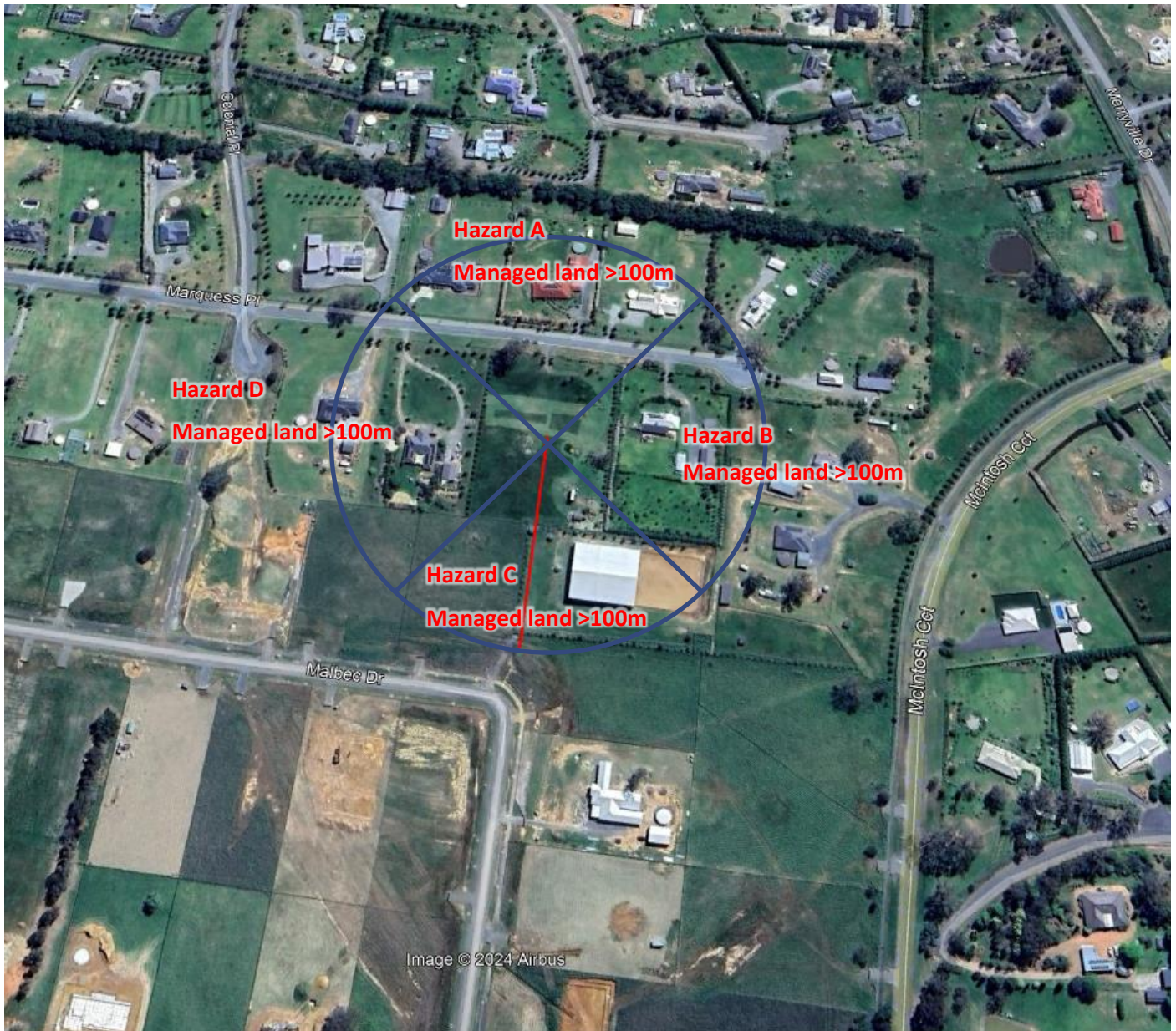


## Hazard Vegetation and Effective Slope:

The building is located within a new urban subdivision, with managed vegetation within the site and adjacent residential properties. All land within 140m assessment area is residential land with occupied buildings.

Some long grass remains on the two undeveloped lots at the rear boundary, this is not consistent with estate by laws and regulations that require the lots to be maintained. These lots are expected to be developed in the short term and the grassland vegetation to be managed.

Slope and vegetation characteristics are detailed in the diagram below:



Hazard Identification



View of the site from Marquess Pl



View of the rear boundary from the site



View of the site from the rear boundary

# General Asset Protection Zone and Landscaping Advice for Bushfire Prone Areas

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An Asset Protection Zone (APZ) is the most important feature in preparing a property for bushfire. The APZ is an area of modified or “managed” vegetation around a building, designed to provide space between the bushfire and building to reduce the severity of the bushfire attack. The amount of space required is relative to the expected intensity of the fire and will vary according to the slope and vegetation category, but in general the greater the separation distance (APZ) the lower the risk.

While not always the same, the BAL rating for construction is also based on the separation distance from hazard vegetation.

The APZ is designed to break up continuity and reduce the volume of available fire fuel and is intended to provide:

- A defensible space between a bush fire and a building,
- An area of reduced bush fire fuel that assists with suppression of fire,
- An area from which back-burning operations may be conducted, and
- An area which allows access for firefighters and homeowners to get between the fire and building to effectively defend the property.

While an APZ does not require total vegetation removal, modification to some extent is generally necessary and some vegetation and tree removal may be required. Existing structures may be eligible for the 10/50 rule exemption, however council approval is generally required for clearing vegetation. Before conducting any vegetation removal, it is strongly advised to consult your local council to ensure environmental regulations and values are maintained.

## Components of an APZ

The size of the APZ will vary according to the vegetation type and slope of the land, but can generally be broken down into 3 main areas:

- Defendable space
- Inner Protection Zone
- Outer Protection Zone

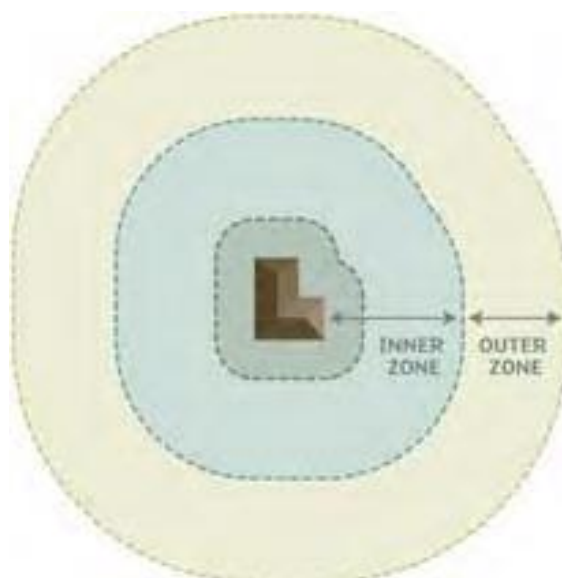


Image Courtesy of CFA

An explanation and standard for each area is as follows:

### Minimum Defendable Space

This is the part of the inner protection area closest to the building where a person is expected to be able to conduct firefighting for property protection, such as extinguishing spot fires before and after the passage of the fire front.

- Vegetation should be heavily managed within 10 meters of the building.
- Flammable objects, plants, mulches etc. Should not be placed in the vicinity of vulnerable parts of the building such as windows, doors, timber decks or gas connections.
- Tree canopy should not encroach within 2m of the roofline.

### Inner Protection Area

The Inner Protection Area (IPA) incorporates the defendable space and is critical to reduce the heat exposure of the building.

#### Trees:

- a. Tree canopy should cover less than 15% at maturity
- b. Trees at maturity should not overhang the building
- c. Lower limbs should be removed up to a height of 2m from the ground
- d. Tree canopies should be separated by 2 to 5m
- e. Preference should be given to smooth barked and evergreen trees

#### Shrubs

- a. Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards the building. Generally separated by 1.5 times the mature height.
- b. Shrubs should not be located beneath trees
- c. Shrubs should not form more than 10% of the ground cover
- d. Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation

#### Grass

- a. Grass should be kept mown (no more than 100mm in height as a guide)
- b. Surface fuels, leaves, sticks and vegetation debris should be removed regularly.

### Outer Protection Area

The OPA is the remainder of the APZ between the IPA and the hazard vegetation and only applicable in forest vegetation. When establishing the OPA the following requirements apply:

#### Trees

- f. Tree canopy should cover less than 30% at maturity
- g. Canopies should be separated by 2 to 5m
- h. Tree branches should be removed below 2m.

#### Shrubs

- a. Shrubs should not form a continuous canopy
- b. Shrubs should form no more than 20% of ground cover

#### Grass

- a. Grass should be kept mown to a height of less than 100mm
- b. Leaves and other debris should be removed regularly

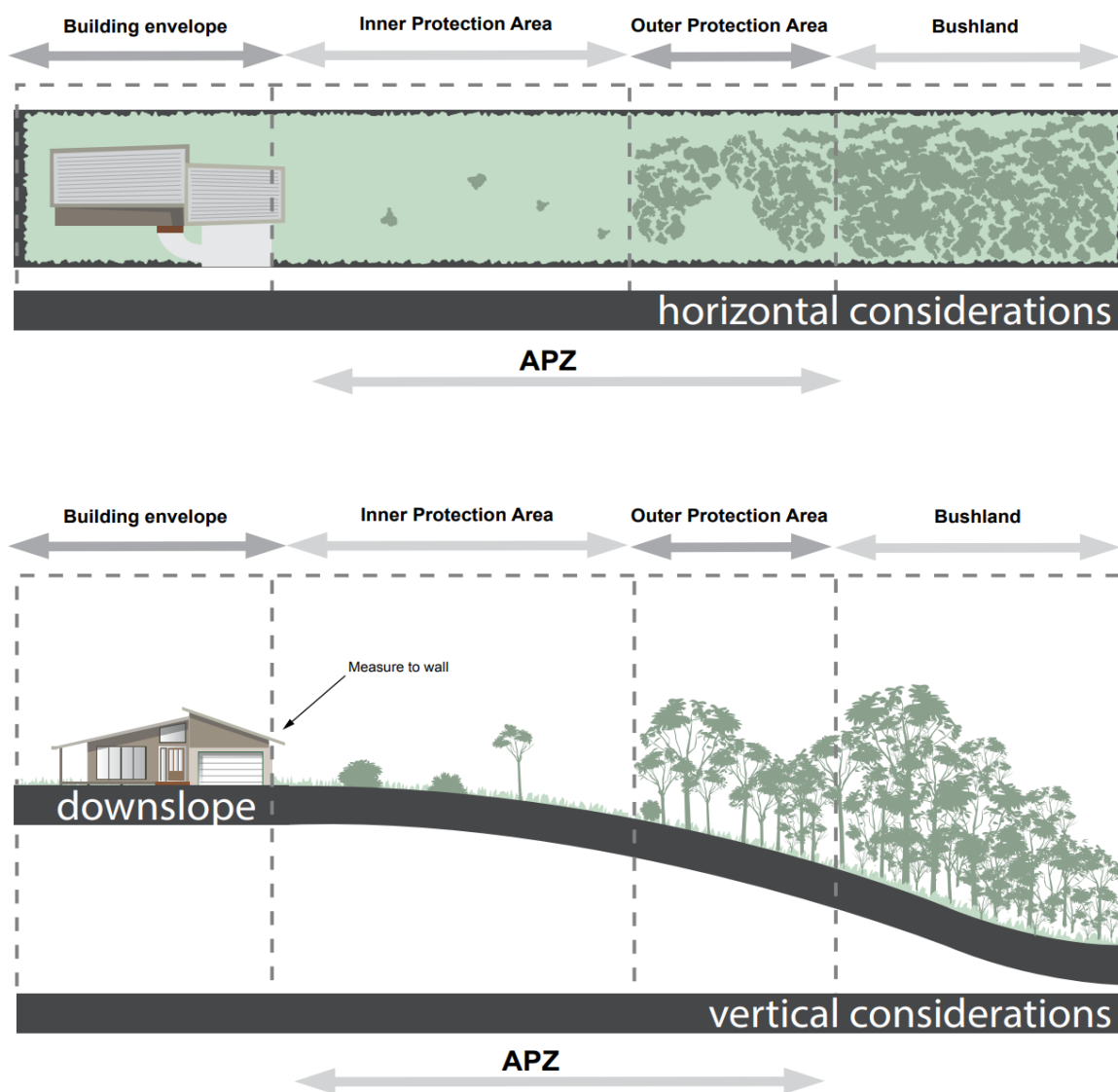


Image Courtesy of NSW RFS

## Landscaping Considerations in the APZ

At early design stage resilient landscape features such as driveways, paved entertaining areas, tennis courts swimming pools and irrigated lawns should be incorporated into the layout of the APZ. Where possible, emphasis should be placed on the north and western aspects as this is typically the direction of extreme fire weather.

Vulnerable building components such as gas meters, large glass facades and timber decks should be well separated from flammable materials including mulches and planting, and care taken to reduce exposure to the bushfire hazard.

Wherever possible, irrigation should be used to keep vegetation green and healthy in the APZ, particularly the inner area. Plant choices should be made for low flammability characteristics, and smooth bark tree species chosen over rough bark. Non-Flammable choices such as gravel, or fire-retardant mulch should also be made for ground cover.

Further landscaping advice may be found in Appendix 5 of NSW Planning for Bushfire Protection (2006), available on the NSW RFS website.

## Windbreaks

Trees as windbreaks can be a beneficial feature in reducing wind speeds providing, radiant heat protection and acting as an ember filter. Some considerations for planting of windbreaks are:

- Not within the Inner Protection Area.
- Ensure there is 1.5 to 3 times the mature height of the tree separation from the building.
- Ensure adequate separation from the hazard vegetation to ensure that the windbreak does not become a hazard itself.
- Ensure gaps in the windbreak do not create a funnel for wind to impact the building
- Species are selected for low flammability and smooth bark characteristics.
- Placed on the dominant fire wind side of the building (generally north to west in southern NSW).

## Further Information

Call Southern Bushfire Solutions for a vegetation management plan and assistance in establishing your Asset Protection Zone. We are also happy to work with landscape designers and architects in developing building and landscape plans that meet APZ requirements.

Further useful information can be found in:

- NSW RFS - Planning for Bushfire Protection (2019)
- NSW RFS - Standards for Asset Protection Zones (2005)
- C. Ramsay and L. Rudolph – Landscape and Building Design for Bushfire Areas (2003).

## References

Kieth, D. (2004). *Ocean Shores to Desert Dunes*.

New South Wales. (n.d.). *Environmental Planning and Assessment Act (1979)*. Retrieved from Legislation NSW: <http://www.legislation.nsw.gov.au/inforce/bcf67089-22e3-e527-94e3-85b5d06e2ec2/1979-203.pdf>

New South Wales. (n.d.). *State Environmental Planning Policy - Exempt and Complying Development (2008)*. Retrieved from Legislation NSW: <http://www.legislation.nsw.gov.au/inforce/17c080b8-4ec2-e8af-a364-e7cf43a568a2/2008-572.pdf>

NSW Planning and Environment. (2020). *NSW PLanning Portal*. Retrieved from [https://www.planningportal.nsw.gov.au/find-a-property/property/3939400\\_\\_2\\_\\_DP1220735](https://www.planningportal.nsw.gov.au/find-a-property/property/3939400__2__DP1220735)

NSW Rural Fire Service. (2019). *Planning for Bushfire Protection*. Sydney.

Standards Australia. (2018). *AS 3959 - Construction of Buildings in Bushfire Prone Areas*.

## Note:

Southern Bushfire Solutions Pty. Ltd. has been engaged to provide a BAL assessment only. This document is not intended to demonstrate that the proposed development fully complies with the requirements of NSW RFS Planning for Bushfire Protection (2019). Bushfire protection measures such as Asset Protection Zones, access, water and utility services landscaping may require further assessment.

BAL ratings are based on Asset Protection Zone standards being established and maintained for the life of the development. Where the APZ specified in this assessment is not achieved, the BAL rating is considered void. No environmental assessment has been conducted in developing this report, and any vegetation removal required may be subject to local regulations. Council advice should always be sought prior to any vegetation removal.